AMENDMENTS TO THE CLAIMS

The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

1. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)
12. (Canceled)
13. (Canceled)
14. (Canceled)
15. (Canceled)
16. (Canceled)
17. (Canceled)
18. (Canceled)
19. (Canceled)
20. (Canceled)
21. (Canceled)
22. (Canceled)
23. (Canceled)
24. (Canceled)
26. (Canceled)
27. (Canceled)
28. (Canceled)
29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Canceled)

36. (Canceled)

37. (Currently Amended) ~~The method of claim 34 further comprising~~ A method comprising:

moving an ultrasonic probe to a treatment site in a body such that the ultrasonic probe is in communication with a biological material;

producing a torsional vibration along the ultrasonic probe, the torsional vibration inducing a transverse vibration in a portion of the ultrasonic probe; and

tuning the transverse vibration into coincidence with the torsional vibration along the portion of the ultrasonic probe in which the transverse vibration is induced.

38. (Currently Amended) ~~The method of claim 34 further comprising~~ A method comprising:

moving an ultrasonic probe to a treatment site in a body such that the ultrasonic probe is in communication with a biological material;

producing a torsional vibration along the ultrasonic probe, the torsional vibration inducing a transverse vibration in a portion of the ultrasonic probe; and

applying a tension to the ultrasonic probe to tune the transverse vibration into coincidence with the torsional vibration.

39. (Currently Amended) ~~The method of claim 34 further comprising~~ A method comprising:

moving an ultrasonic probe to a treatment site in a body such that the ultrasonic probe is in communication with a biological material;

producing a torsional vibration along the ultrasonic probe, the torsional vibration inducing a transverse vibration in a portion of the ultrasonic probe; and

bending the ultrasonic probe to tune the transverse vibration into coincidence with the torsional vibration.

40. (Canceled)

41. (Canceled)

42. (Canceled)

43. (Canceled)

44. (Canceled)

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48. (Canceled)

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50. (Canceled)

51. (Canceled)

52. (Canceled)

53. (Canceled)

54. (Canceled)

55. (Canceled)

57. (Currently Amended) ~~The method of claim 55 further comprising~~ A method comprising:

placing an ultrasonic probe in communication with a biological material in a body;

activating an energy source to produce an electric signal that drives a transducer coupled to the ultrasonic probe to produce a torsional vibration along a portion of the flexible probe, the torsional vibration inducing a transverse vibration along the longitudinal axis of the flexible probe; and

applying a tension to the flexible probe causing the transverse vibration to tune into coincidence with the torsional vibration.

58. (Currently Amended) ~~The method of claim 55 further comprising~~ A method comprising:

placing an ultrasonic probe in communication with a biological material in a body;

activating an energy source to produce an electric signal that drives a transducer coupled to the ultrasonic probe to produce a torsional vibration along a portion of the flexible probe, the torsional vibration inducing a transverse vibration along the longitudinal axis of the flexible probe; and

bending the flexible probe causing the transverse vibration to tune into coincidence with the torsional vibration.

59. (Canceled)

60. (Canceled)

61. (Canceled)

75. (Canceled)

76. (Canceled)

77. (Canceled)

78. (Canceled)

79. (Canceled)

80. (Canceled)

81. (Canceled)

82. (Canceled)

83. (Canceled)

84. (Canceled)

85. (Canceled)

86. (Canceled)

87. (New) The method of claim 37 wherein the portion of the ultrasonic probe in which the transverse vibration is induced supports the torsional vibration and the transverse vibration.

88. (New) The method of claim 37 further comprising superimposing the torsional vibration and the transverse vibration along the portion of the ultrasonic probe in which the transverse vibration is induced.

89. (New) The method of claim 37 further comprising segregating the torsional vibration and the transverse vibration along the ultrasonic probe.

90. (New) The method of claim 37 wherein the torsional vibration is produced by a transducer coupled to the ultrasonic probe.

91. (New) The method of claim 37 further comprising generating acoustic energy in a medium surrounding the ultrasonic probe through an interaction of a surface of the ultrasonic probe and the medium surrounding the ultrasonic probe resulting from the torsional vibration and the transverse vibration.

92. (New) The method of claim 37 further comprising producing a plurality of nodes and a plurality of anti-nodes along at least the portion of the ultrasonic probe in which the transverse. vibration is induced.

93. (New) The method of claim 37 further comprising producing a plurality of transverse nodes and a plurality of transverse anti-nodes along at least the portion of the ultrasonic probe in which the transverse vibration is induced.

94. (New) The method of claim 37 further comprising producing a rotation and counterrotation of the ultrasonic probe along at least the portion of the ultrasonic probe in which the transverse vibration is induced.

95. (New) The method of claim 37 further comprising projecting the torsional vibration in a forward direction and a reverse direction about a plurality of nodes of the ultrasonic probe.

96. (New) The method of claim 37 further comprising sweeping the ultrasonic probe along the treatment site.

97. (New) The method of claim 37 further comprising moving the ultrasonic probe back and forth along the treatment site.

98. (New) The method of claim 37 further comprising rotating the ultrasonic probe along the treatment site.

99. (New) The method of claim 37 further comprising delivering ultrasonic energy to the ultrasonic probe in a frequency range from about 10 kHz to about 100 kHz.

100. (New) The method of claim 37 further comprising determining a resonant frequency of the transducer and providing electrical energy to a transducer at the resonant frequency of the transducer.

101. (New) The method of claim 37 further comprising providing the ultrasonic probe having a flexibility allowing the ultrasonic probe to support the torsional vibration and the transverse vibration.

102. (New) The method of claim 37 wherein the portion in which the transverse vibration is induced extends along at least a portion of the longitudinal axis of the ultrasonic probe.

103. (New) The method of claim 37 wherein the ultrasonic probe has a first region having a first diameter and a second region having a second diameter, wherein the second diameter is smaller than the first diameter.

104. (New) The method of claim 103 wherein the ultrasonic probe has a tapered transition between the first region and the second region.

105. (New) The method of claim 38 wherein the portion of the ultrasonic probe in which the transverse vibration is induced supports the torsional vibration and the transverse vibration.

106. (New) The method of claim 38 further comprising superimposing the torsional vibration and the transverse vibration along the portion of the ultrasonic probe in which the transverse vibration is induced.

107. (New) The method of claim 38 further comprising segregating the torsional vibration and the transverse vibration along the ultrasonic probe.

108. (New) The method of claim 38 wherein the torsional vibration is produced by a transducer coupled to the ultrasonic probe.

109. (New) The method of claim 38 further comprising generating acoustic energy in a medium surrounding the ultrasonic probe through an interaction of a surface of the ultrasonic probe and the medium surrounding the ultrasonic probe resulting from the torsional vibration and the transverse vibration.

110. (New) The method of claim 38 further comprising producing a plurality of nodes and a plurality of anti-nodes along at least the portion of the ultrasonic probe in which the transverse. vibration is induced.

111. (New) The method of claim 38 further comprising producing a plurality of transverse nodes and a plurality of transverse anti-nodes along at least the portion of the ultrasonic probe in which the transverse vibration is induced.

112. (New) The method of claim 38 further comprising producing a rotation and counterrotation of the ultrasonic probe along at least the portion of the ultrasonic probe in which the transverse vibration is induced.

113. (New) The method of claim 38 further comprising projecting the torsional vibration in a forward direction and a reverse direction about a plurality of nodes of the ultrasonic probe.

114. (New) The method of claim 38 further comprising sweeping the ultrasonic probe along the treatment site.

115. (New) The method of claim 38 further comprising moving the ultrasonic probe back and forth along the treatment site.

116. (New) The method of claim 38 further comprising rotating the ultrasonic probe along the treatment site.

117. (New) The method of claim 38 further comprising delivering ultrasonic energy to the ultrasonic probe in a frequency range from about 10 kHz to about 100 kHz.

118. (New) The method of claim 38 further comprising determining a resonant frequency of the transducer and providing electrical energy to a transducer at the resonant frequency of the transducer.

119. (New) The method of claim 38 further comprising providing the ultrasonic probe having a flexibility allowing the ultrasonic probe to support the torsional vibration and the transverse vibration.

120. (New) The method of claim 38 wherein the portion in which the transverse vibration is induced extends along at least a portion of the longitudinal axis of the ultrasonic probe.

121. (New) The method of claim 38 wherein the ultrasonic probe has a first region having a first diameter and a second region having a second diameter, wherein the second diameter is smaller than the first diameter.

122. (New) The method of claim 121 wherein the ultrasonic probe has a tapered transition between the first region and the second region.

123. (New) The method of claim 39 wherein the portion of the ultrasonic probe in which the transverse vibration is induced supports the torsional vibration and the transverse vibration.

124. (New) The method of claim 39 further comprising superimposing the torsional vibration and the transverse vibration along the portion of the ultrasonic probe in which the transverse vibration is induced.

125. (New) The method of claim 39 further comprising segregating the torsional vibration and the transverse vibration along the ultrasonic probe.

126. (New) The method of claim 39 wherein the torsional vibration is produced by a transducer coupled to the ultrasonic probe.

127. (New) The method of claim 39 further comprising generating acoustic energy in a medium surrounding the ultrasonic probe through an interaction of a surface of the ultrasonic probe and the medium surrounding the ultrasonic probe resulting from the torsional vibration and the transverse vibration.

128. (New) The method of claim 39 further comprising producing a plurality of nodes and a plurality of anti-nodes along at least the portion of the ultrasonic probe in which the transverse. vibration is induced.

129. (New) The method of claim 39 further comprising producing a plurality of transverse nodes and a plurality of transverse anti-nodes along at least the portion of the ultrasonic probe in which the transverse vibration is induced.

130. (New) The method of claim 39 further comprising producing a rotation and counterrotation of the ultrasonic probe along at least the portion of the ultrasonic probe in which the transverse vibration is induced.

131. (New) The method of claim 39 further comprising projecting the torsional vibration in a forward direction and a reverse direction about a plurality of nodes of the ultrasonic probe.

132. (New) The method of claim 39 further comprising sweeping the ultrasonic probe along the treatment site.

133. (New) The method of claim 39 further comprising moving the ultrasonic probe back and forth along the treatment site.

134. (New) The method of claim 39 further comprising rotating the ultrasonic probe along the treatment site.

135. (New) The method of claim 39 further comprising delivering ultrasonic energy to the ultrasonic probe in a frequency range from about 10 kHz to about 100 kHz.

136. (New) The method of claim 39 further comprising determining a resonant frequency of the transducer and providing electrical energy to a transducer at the resonant frequency of the transducer.

137. (New) The method of claim 39 further comprising providing the ultrasonic probe having a flexibility allowing the ultrasonic probe to support the torsional vibration and the transverse vibration.

138. (New) The method of claim 39 wherein the portion in which the transverse vibration is induced extends along at least a portion of the longitudinal axis of the ultrasonic probe.

139. (New) The method of claim 39 wherein the ultrasonic probe has a first region having a first diameter and a second region having a second diameter, wherein the second diameter is smaller than the first diameter.

140. (New) The method of claim 139 wherein the ultrasonic probe has a tapered transition between the first region and the second region.

141. (New) The method of claim 57 further comprising superimposing the torsional vibration and the transverse vibration along the longitudinal axis of the flexible probe.

142. (New) The method of claim 57 further comprising segregating the torsional vibration and the transverse vibration along the longitudinal axis of the flexible probe.

143. (New) The method of claim 57 further comprising generating acoustic energy in a medium surrounding the ultrasonic probe through an interaction of a surface of the ultrasonic probe and the medium surrounding the ultrasonic probe resulting from the torsional vibration and a transverse vibration.

144. (New) The method of claim 57 wherein the ultrasonic probe has a first region having a first diameter and a second region having a second diameter, wherein the second diameter is smaller than the first diameter.

145. (New) The method of claim 144 wherein the ultrasonic probe has a tapered transition between the first region and the second region.

146. (New) The method of claim 58 further comprising superimposing the torsional vibration and the transverse vibration along the longitudinal axis of the flexible probe.

147. (New) The method of claim 58 further comprising segregating the torsional vibration and the transverse vibration along the longitudinal axis of the flexible probe.

148. (New) The method of claim 58 further comprising generating acoustic energy in a medium surrounding the ultrasonic probe through an interaction of a surface of the ultrasonic probe and the medium surrounding the ultrasonic probe resulting from the torsional vibration and a transverse vibration.

149. (New) The method of claim 58 wherein the ultrasonic probe has a first region having a first diameter and a second region having a second diameter, wherein the second diameter is smaller than the first diameter.

150. (New) The method of claim 149 wherein the ultrasonic probe has a tapered transition between the first region and the second region.